

Space Directorate

A HISTORICAL PERSPECTIVE ON SPACE STATION

W. RAY HOOK
DIRECTOR FOR SPACE
LANGLEY RESEARCH CENTER

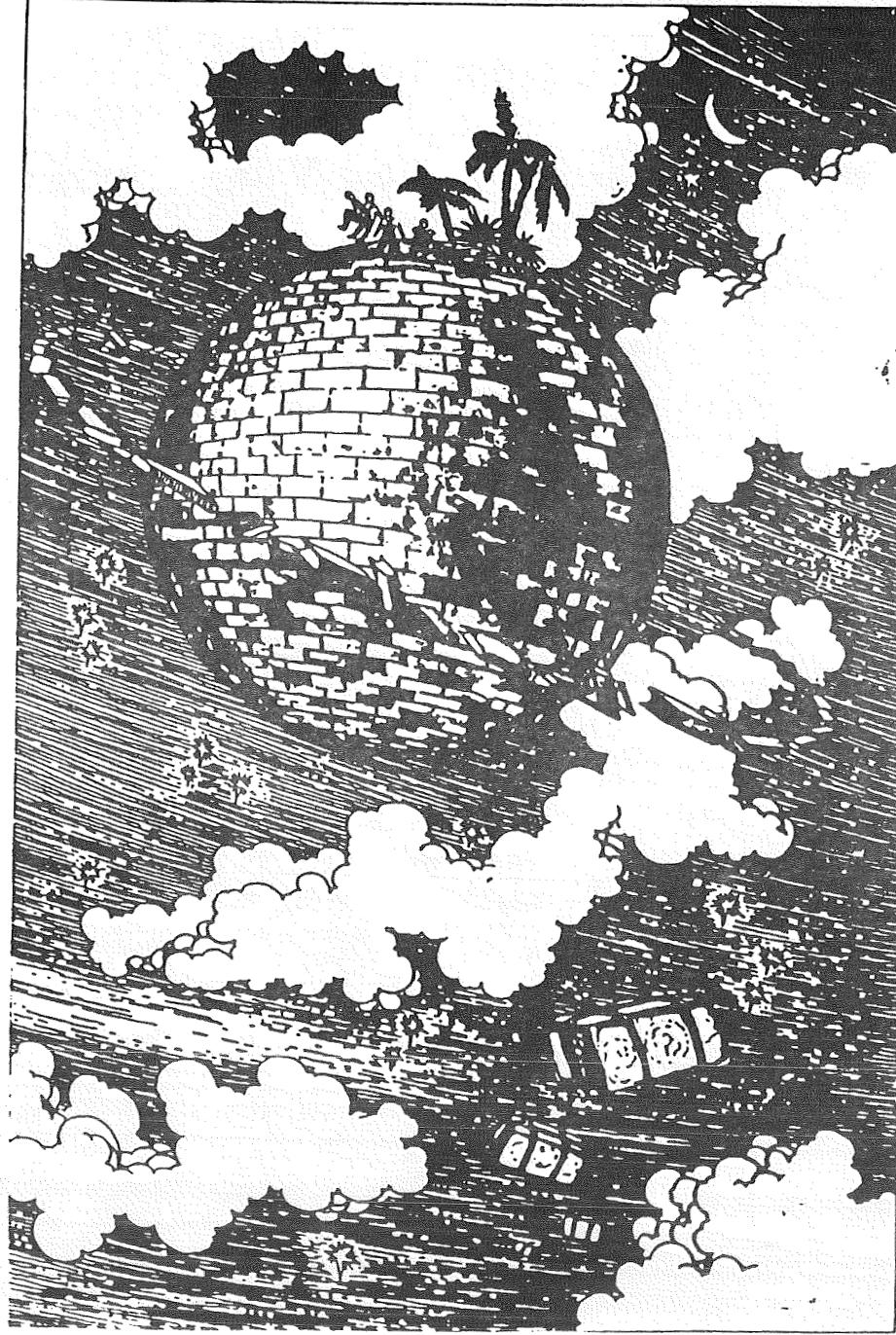
SPACE STATION EVOLUTION
BEYOND THE BASELINE

SOUTH SHORE HARBOUR RESORT AND CONFERENCE CENTER
LEAGUE CITY, TEXAS
AUGUST 7, 1991

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INTERNATIONAL SPACE STATION

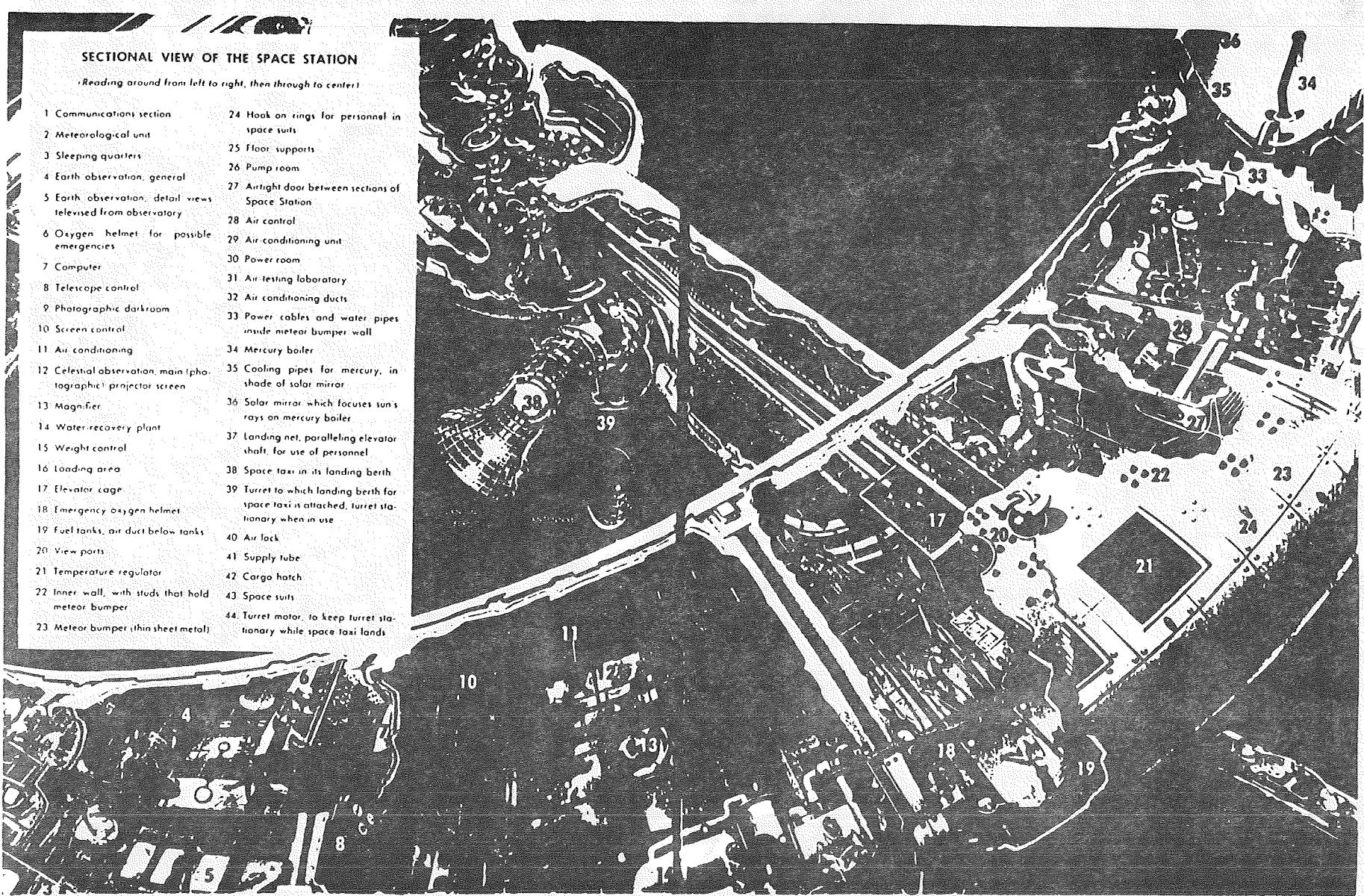
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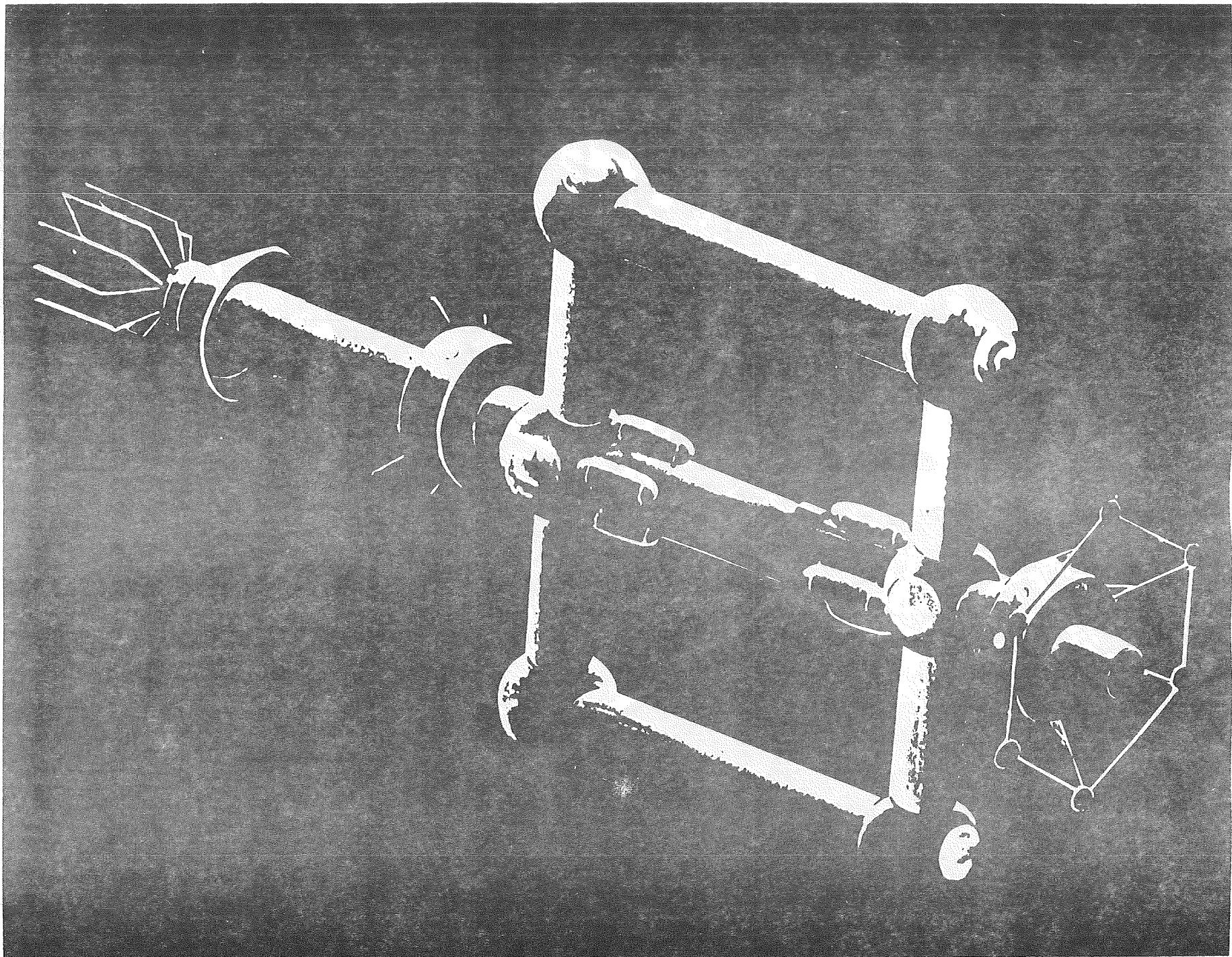
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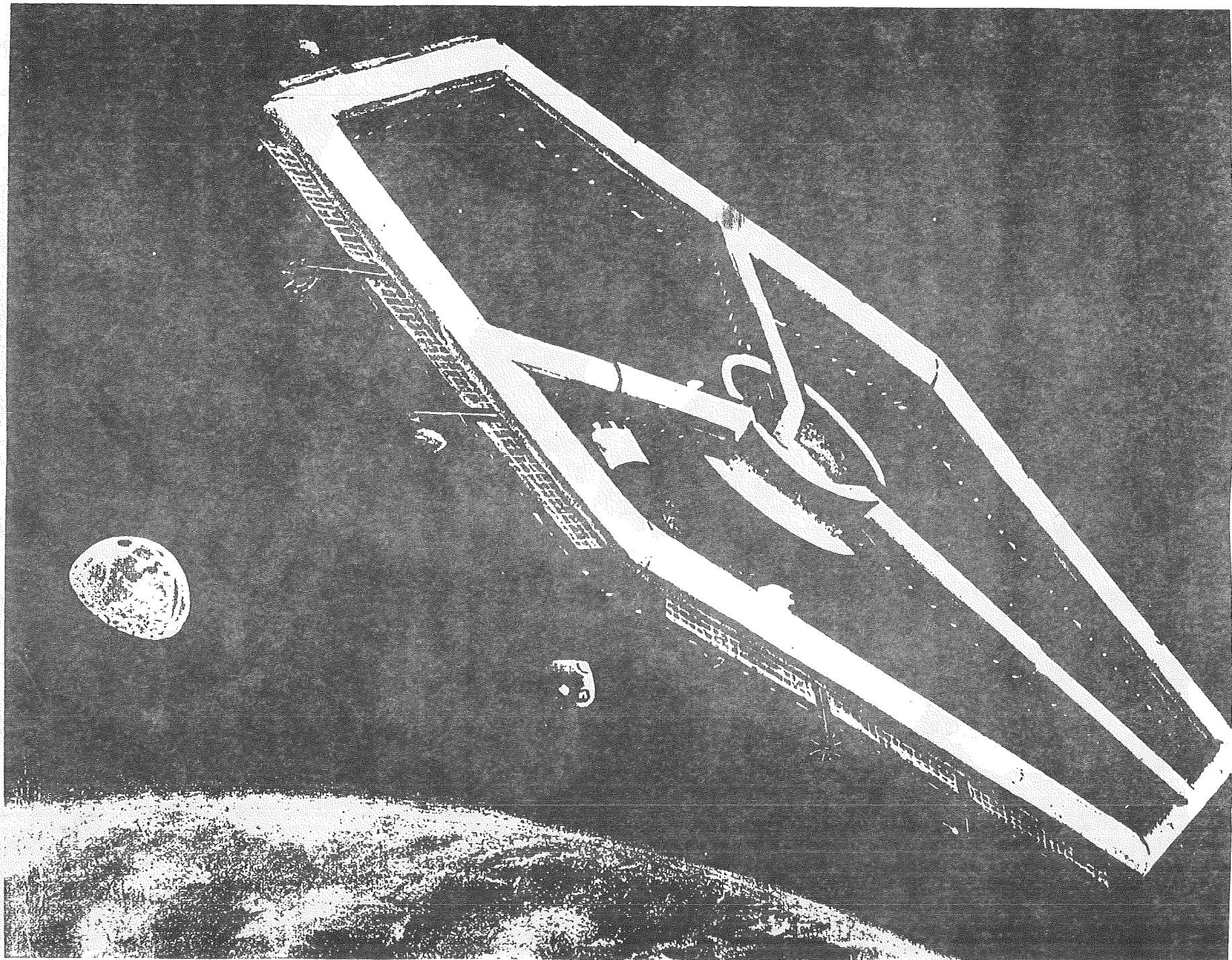


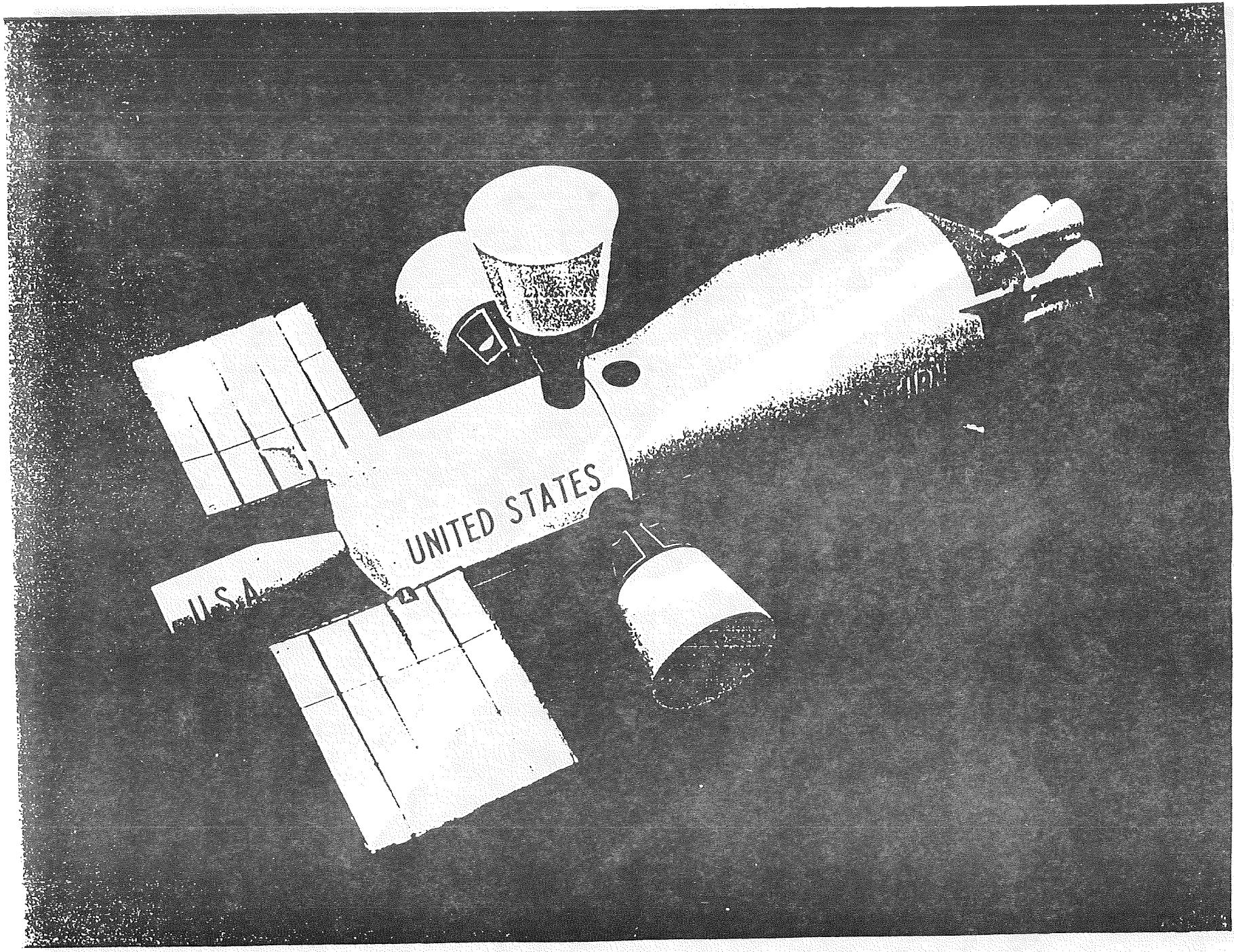
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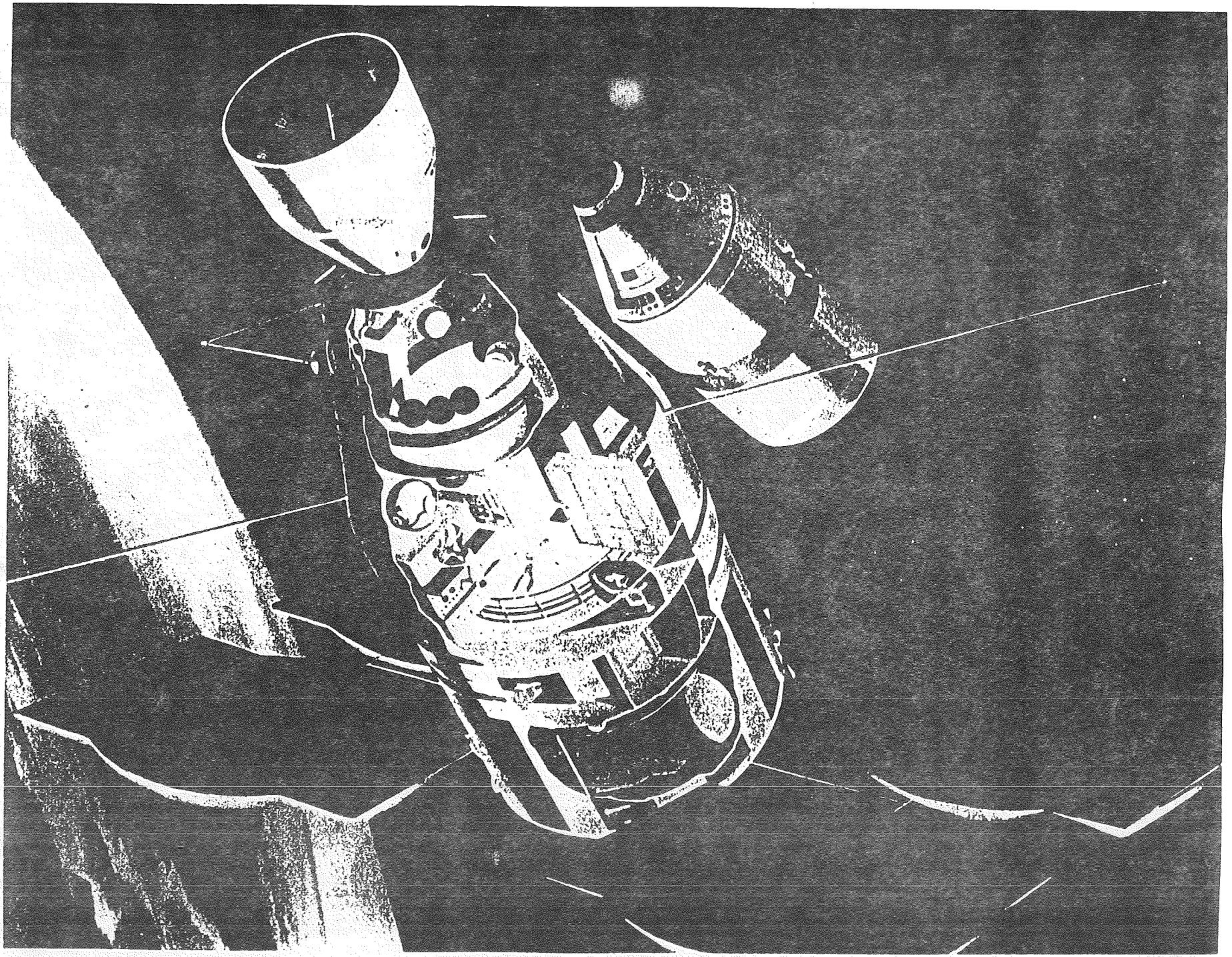


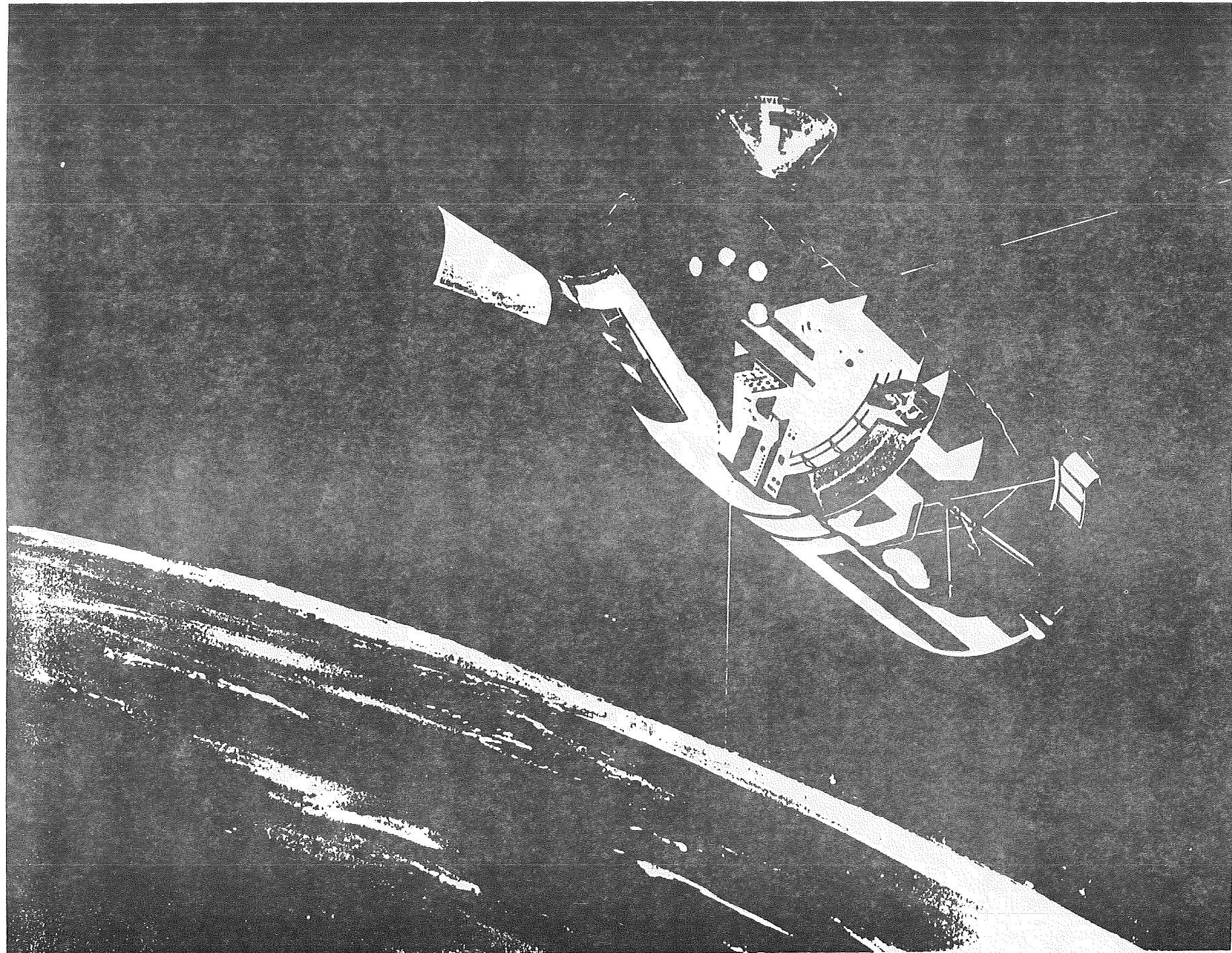


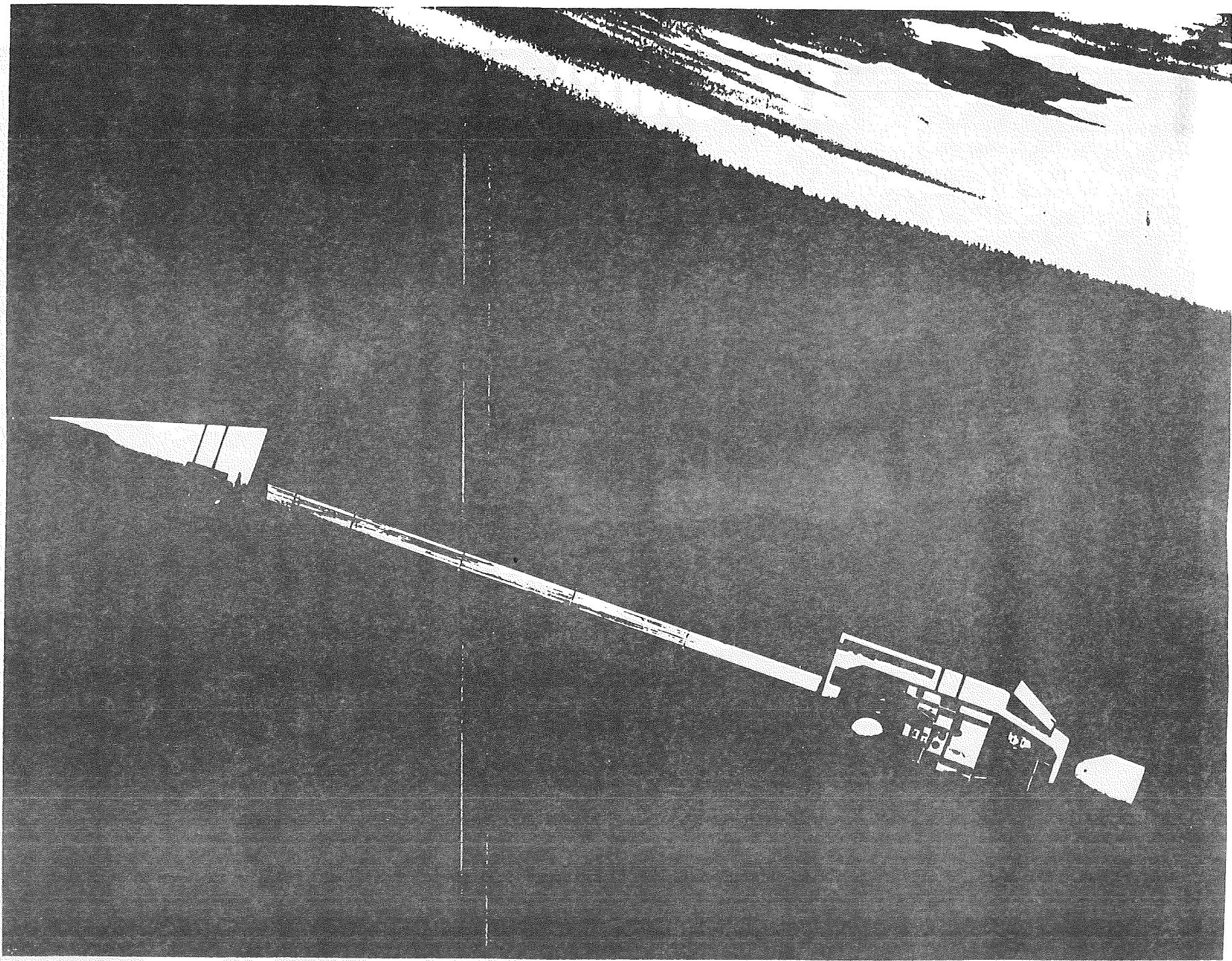


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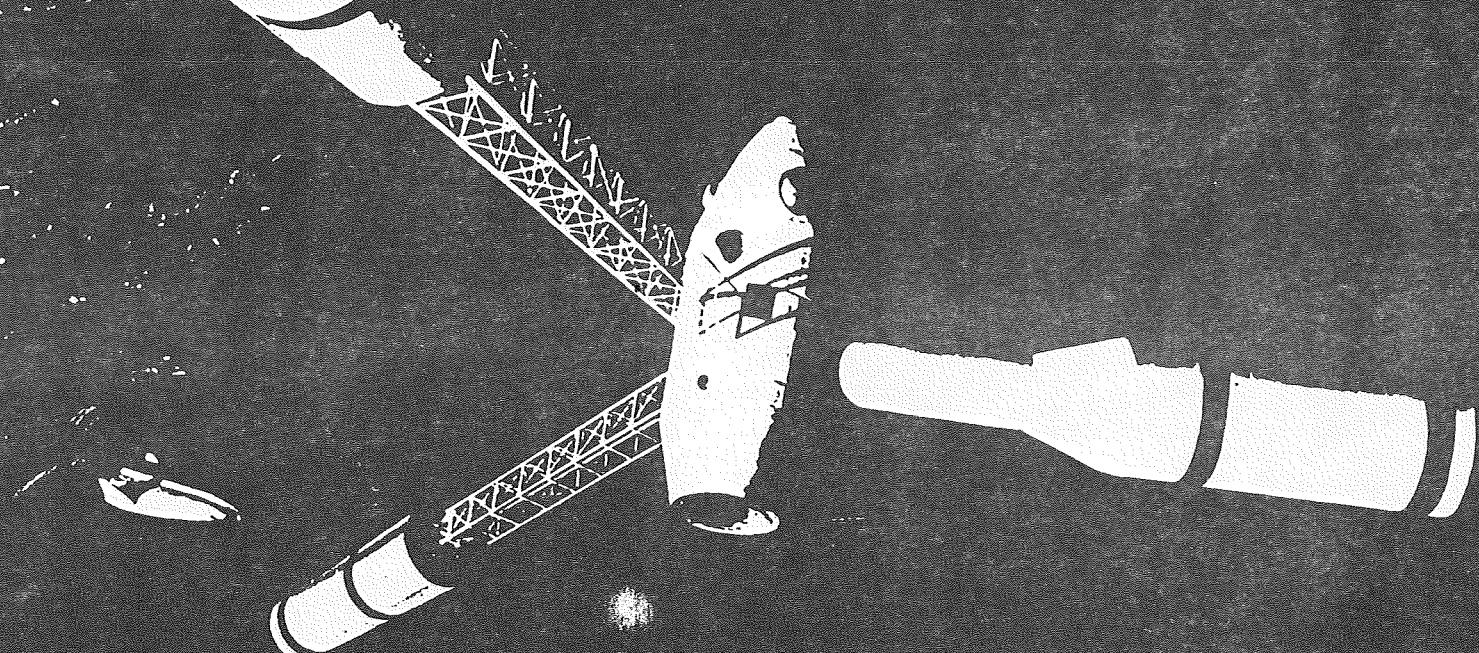
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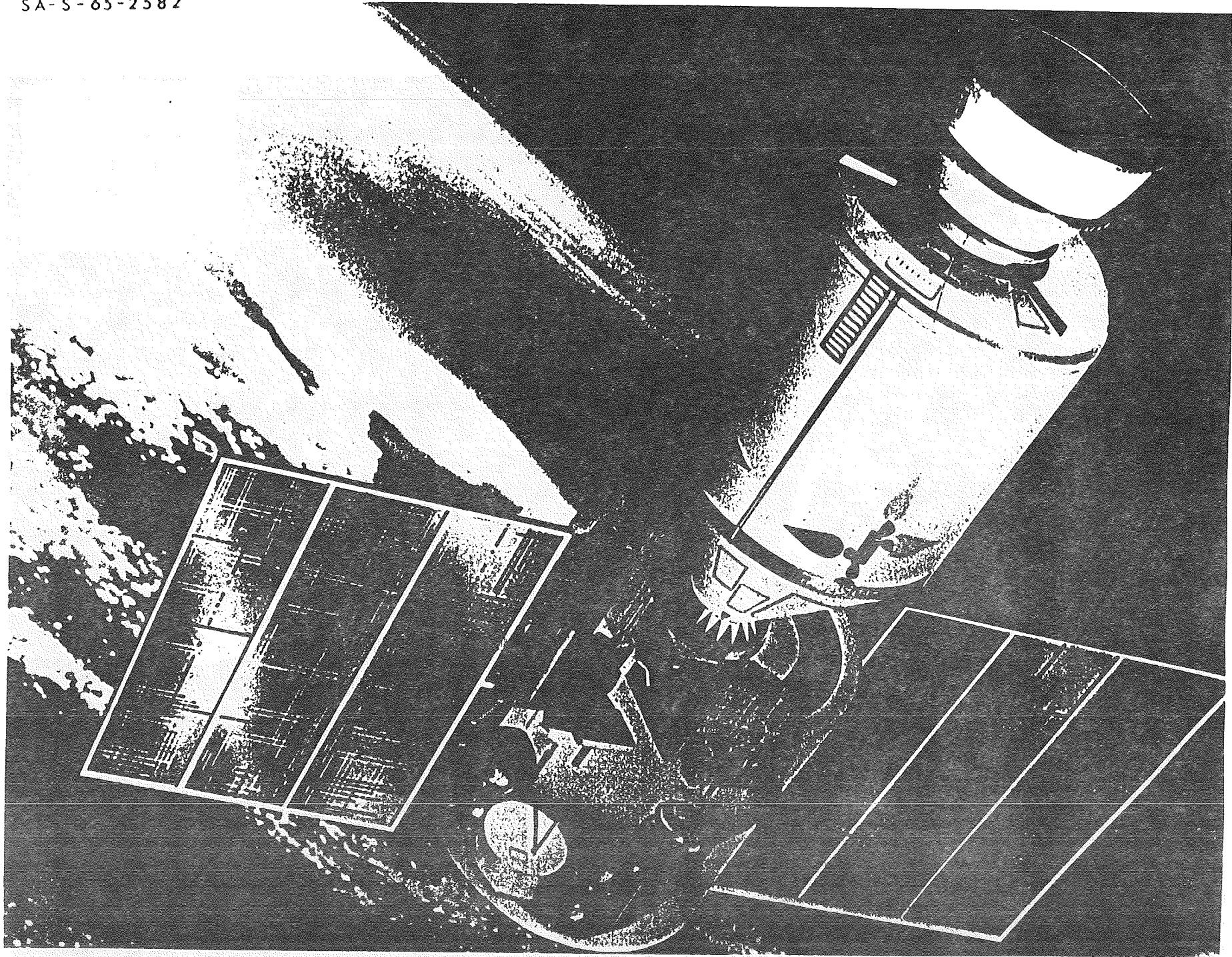


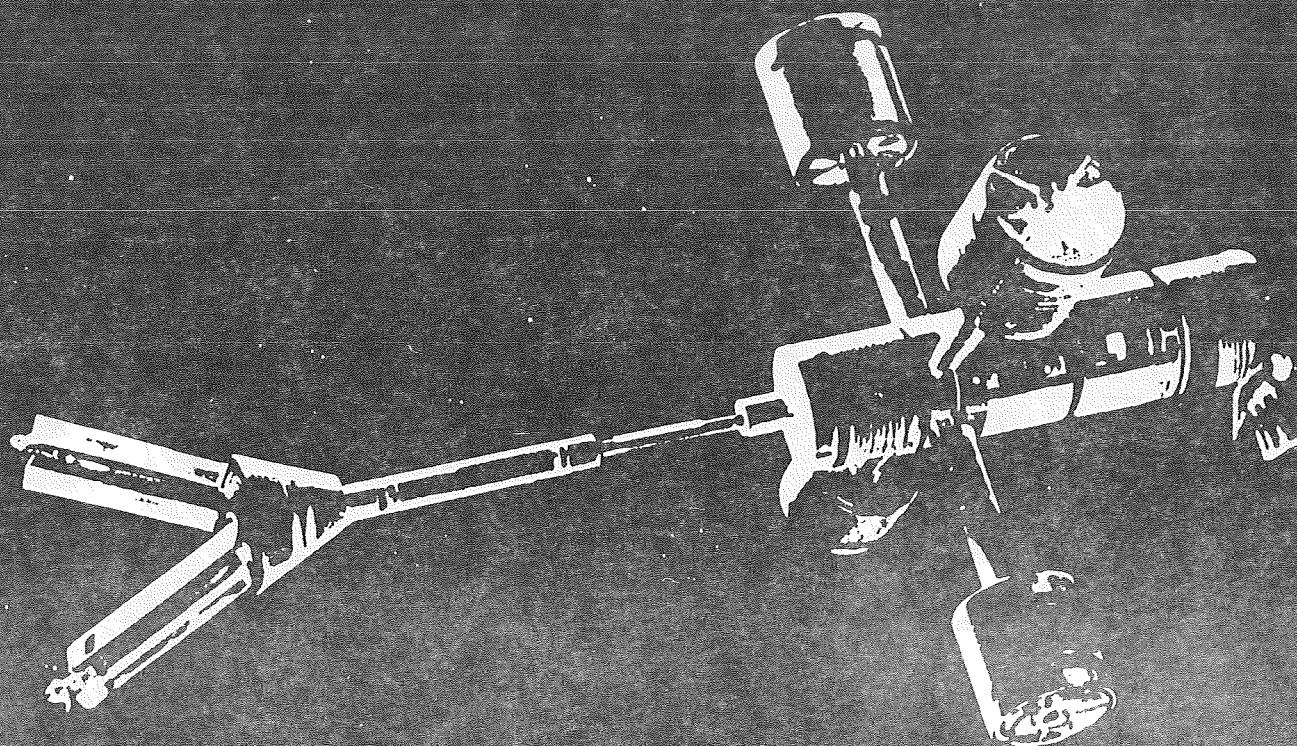
SPACE BASE CONCEPT

SA-S-65-2587

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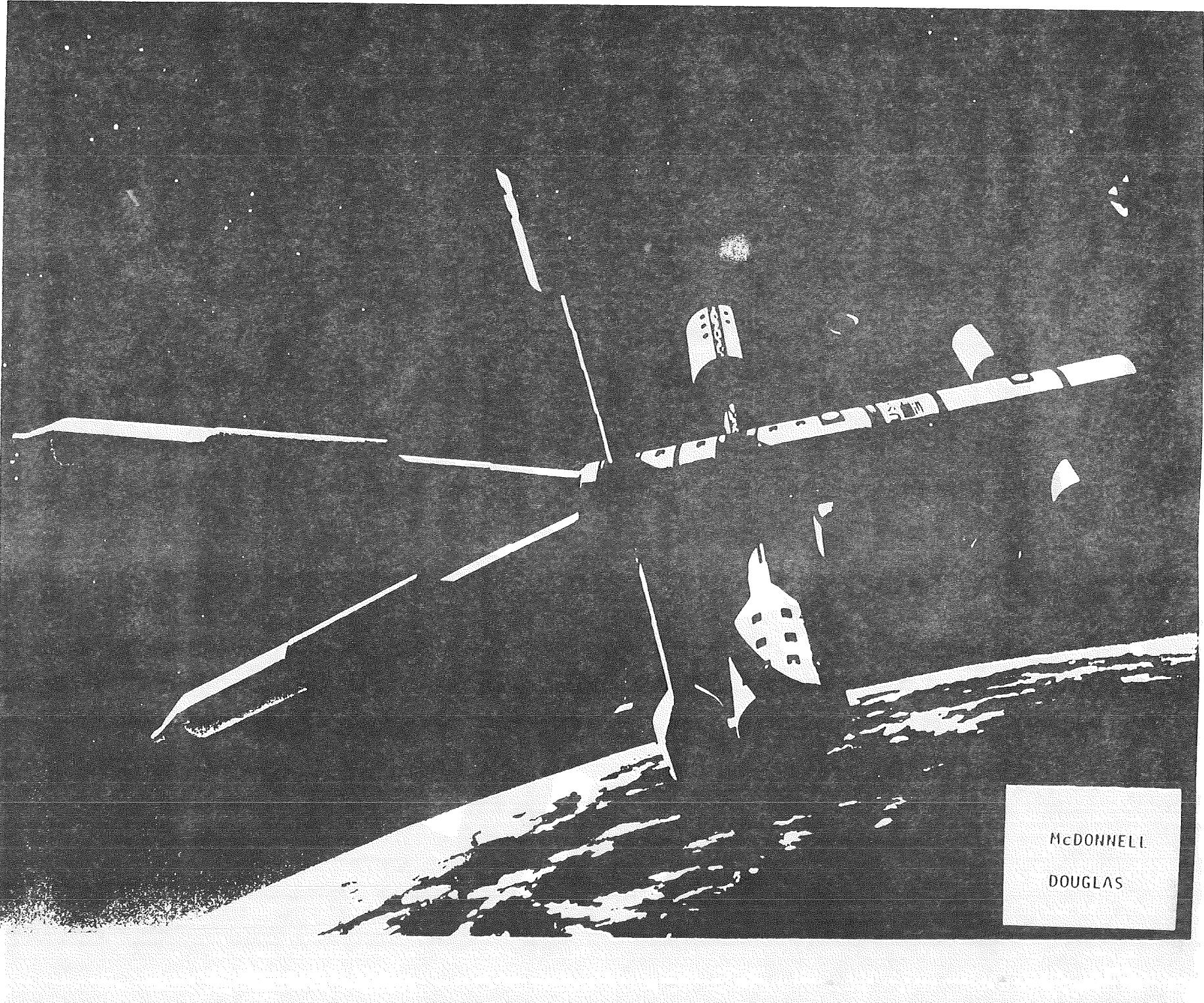


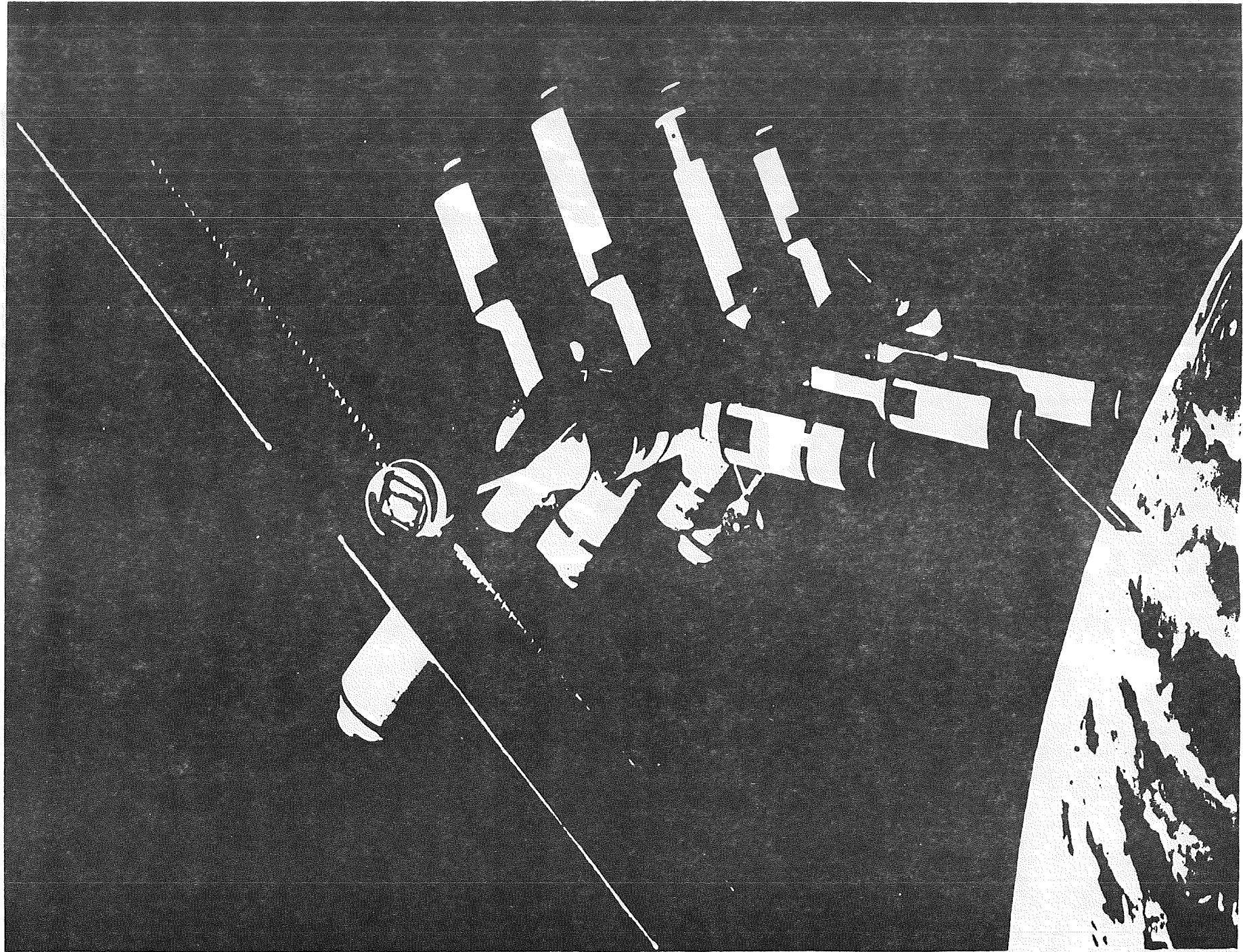
NORTH
AMERICAN
ROCKWELL

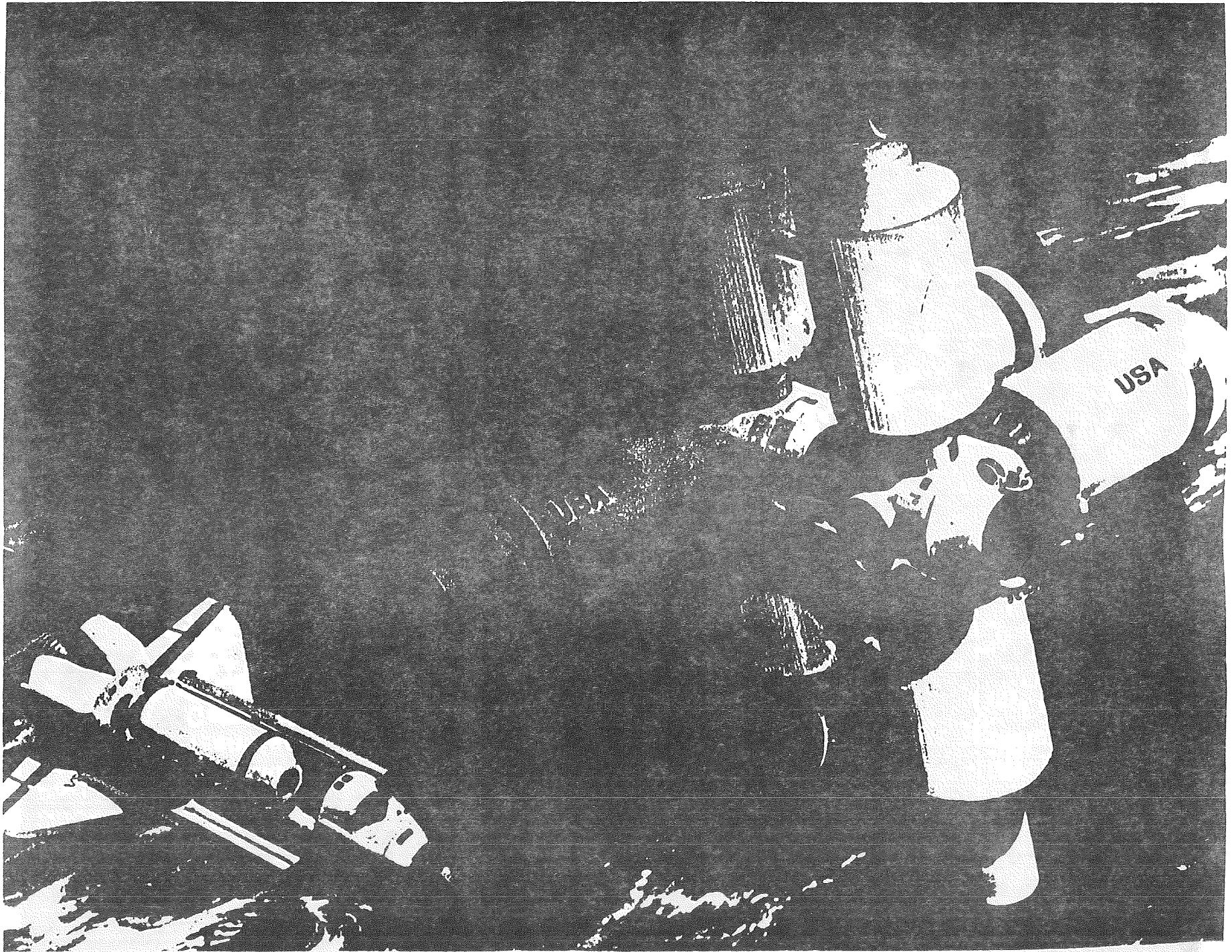
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SALYUT 6

Forward
Docking
Port

Airlock/
Transfer
Compartment

Work Compartment
Primary Controls,
Dining, Sleeping

Work
Compartment

Length 12 1/2 Ft
Width 9 1/2 Ft

Experiment
Operations
Module

Length 14 Ft
Width 14 Ft

Aft Docking Port

Soyuz
Command
Module

Experiment/
Operations
Module

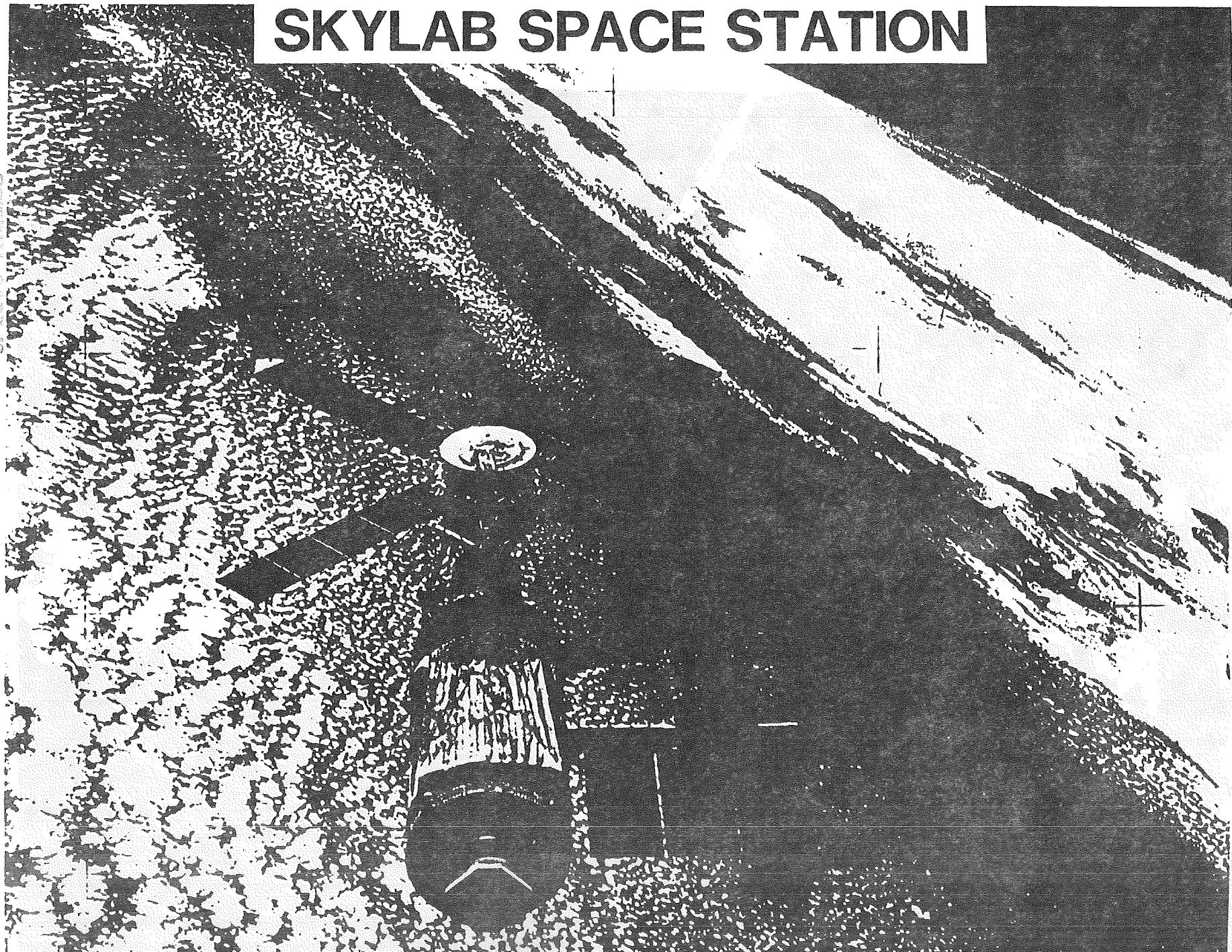
Service/
Propulsion
Module

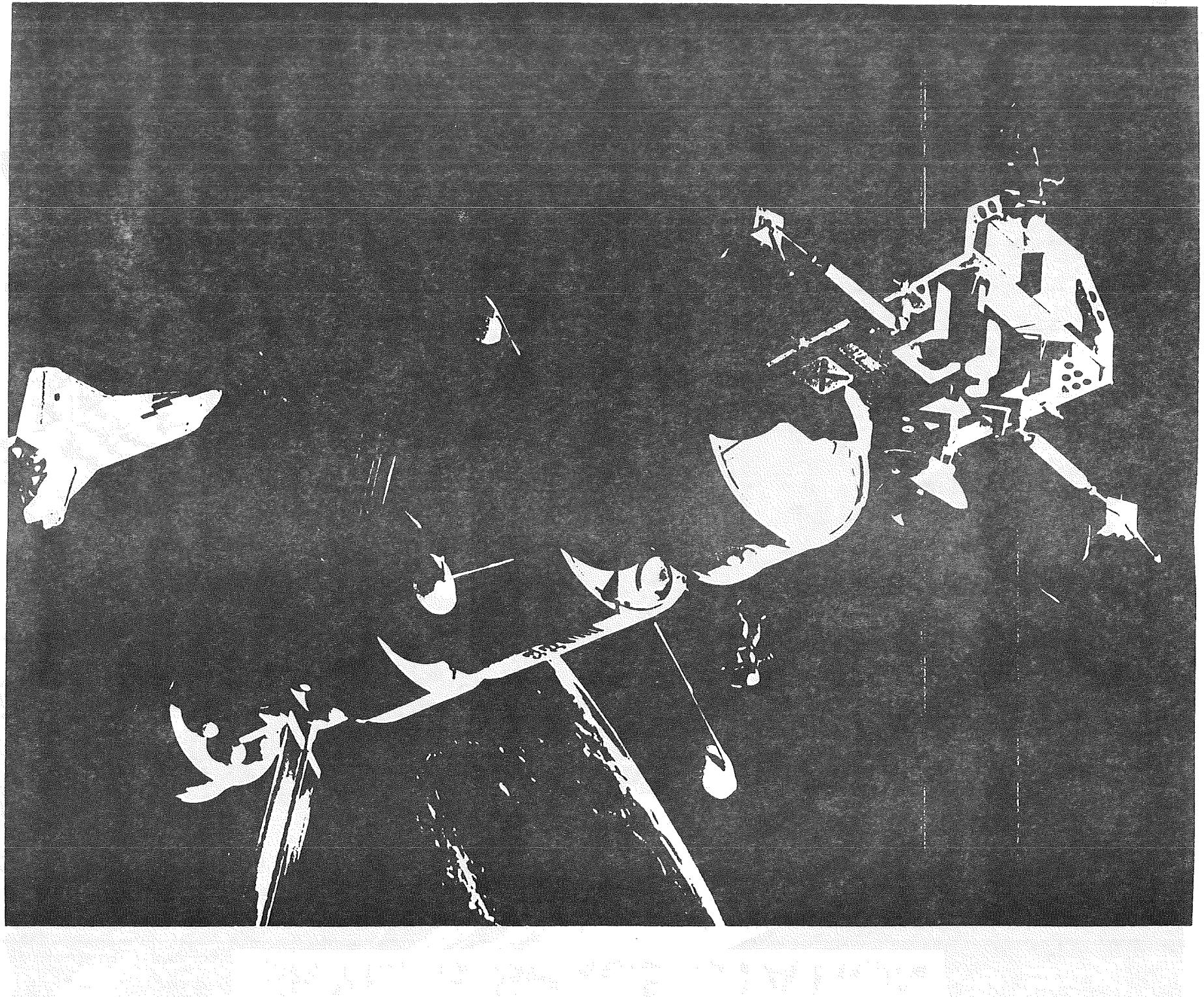
~65 Ft With Soyuz Docked
3500 Ft³ Habitable Volume

SKYLAB SPACE STATION

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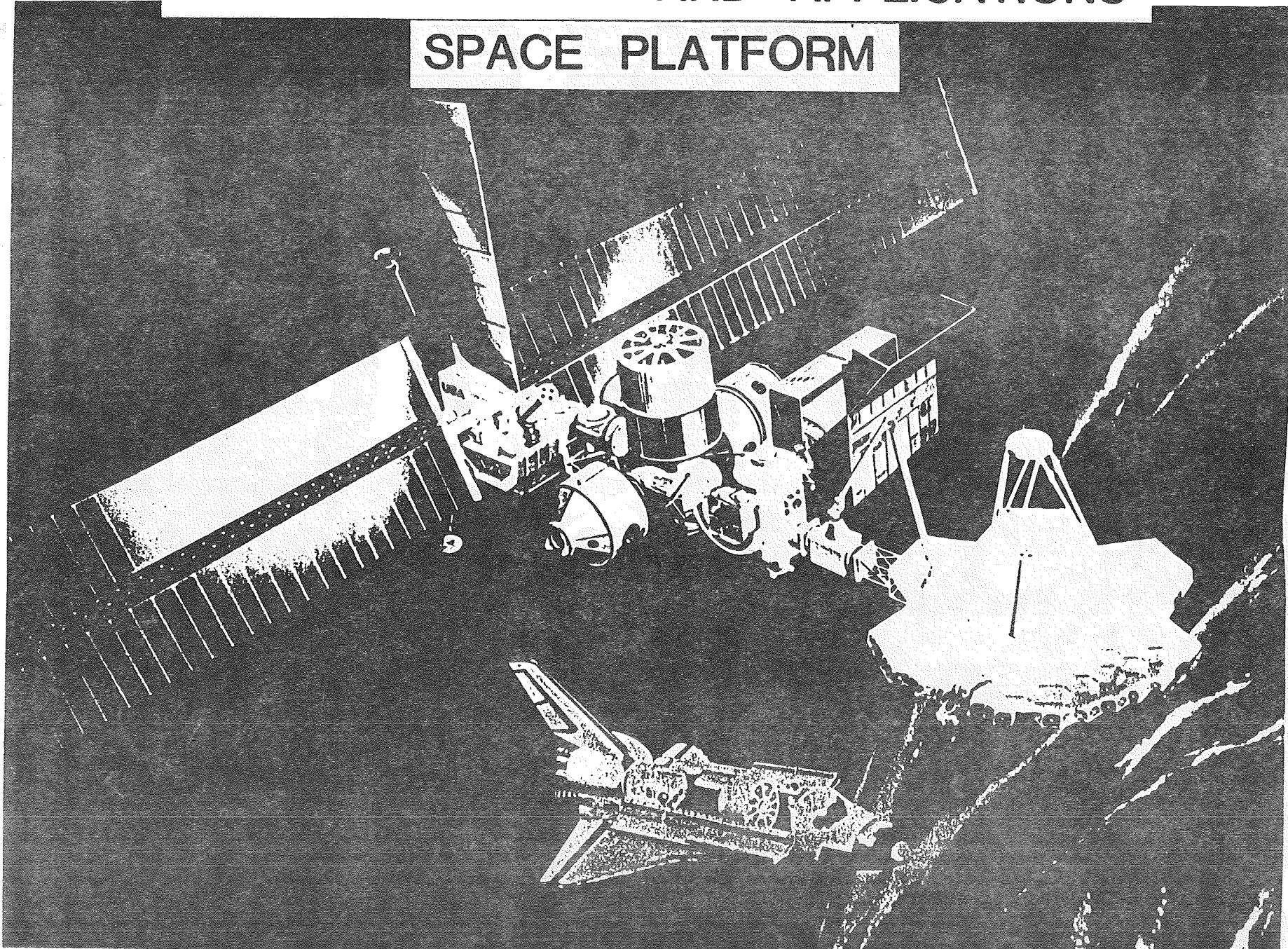


MANNED SCIENCE AND APPLICATIONS

SPACE PLATFORM

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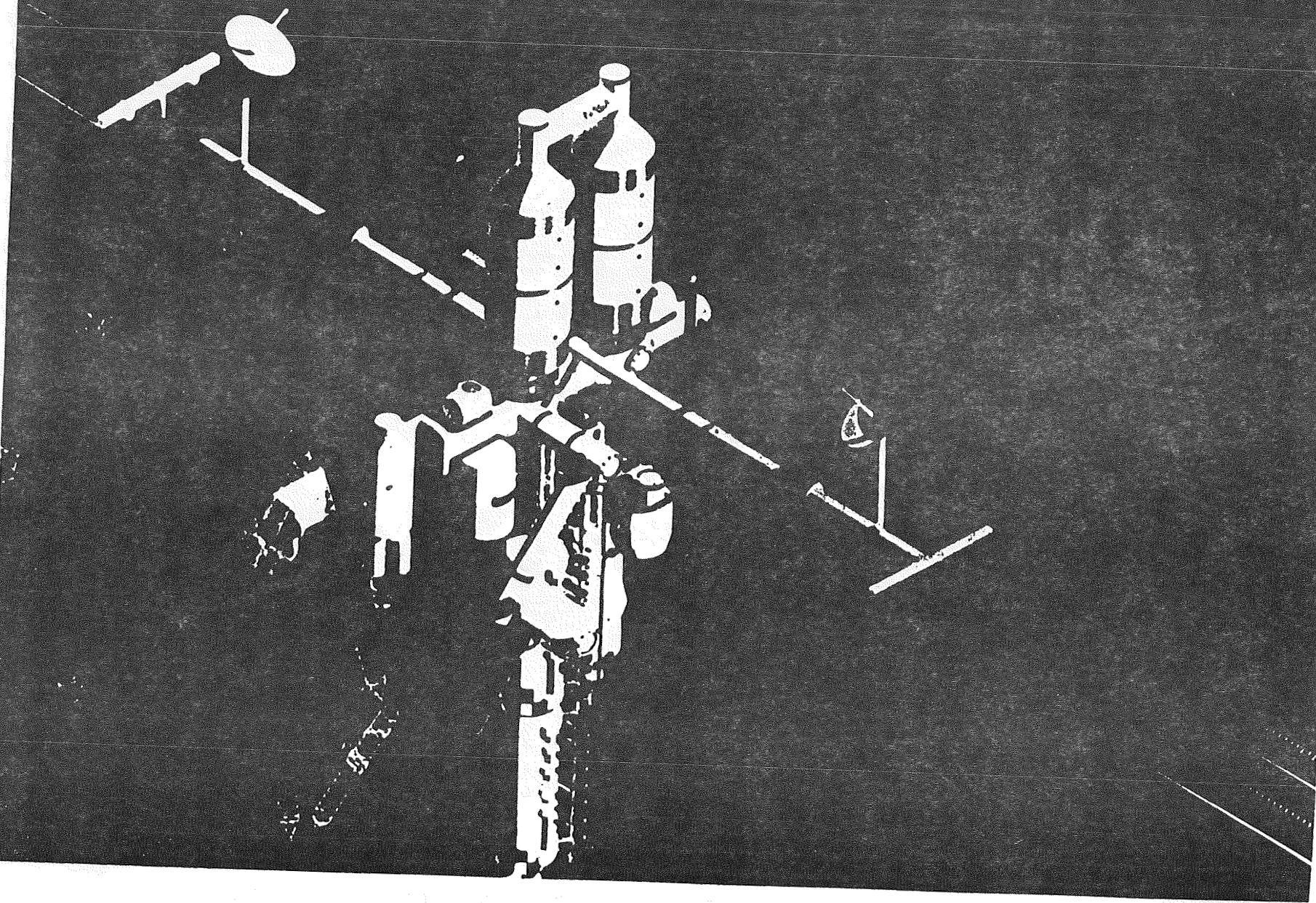
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NASA

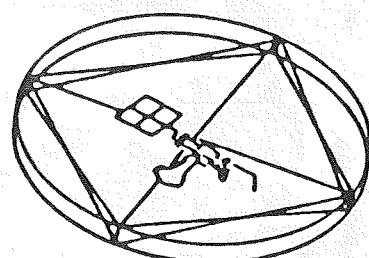
Evolutionary Growth

SOC

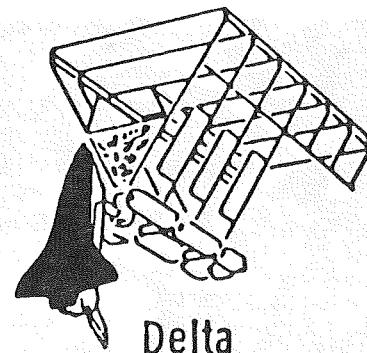


CONFIGURATION CONCEPT OPTIONS (SKUNK WORKS)

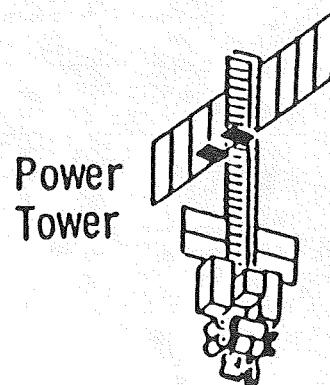
5 Candidate Concepts



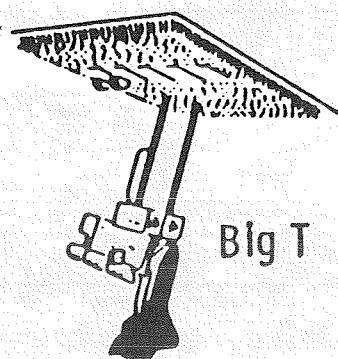
Spinner



Delta



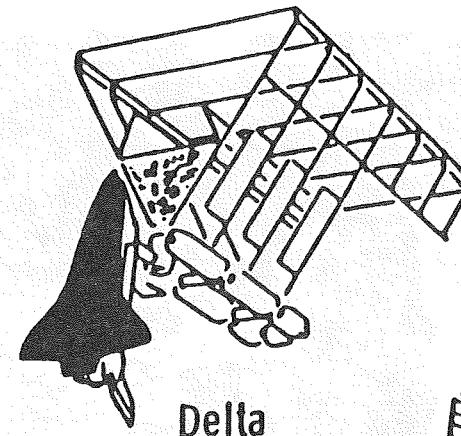
Power
Tower



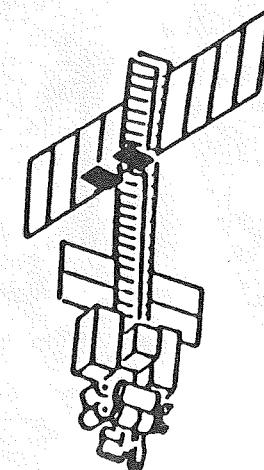
Big T

CDG - Planar

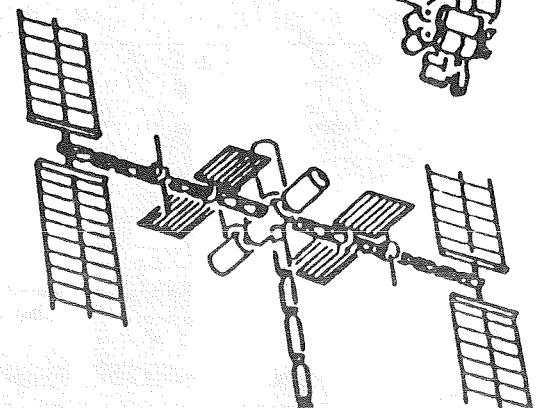
3 Chosen for Detailed Study



Delta

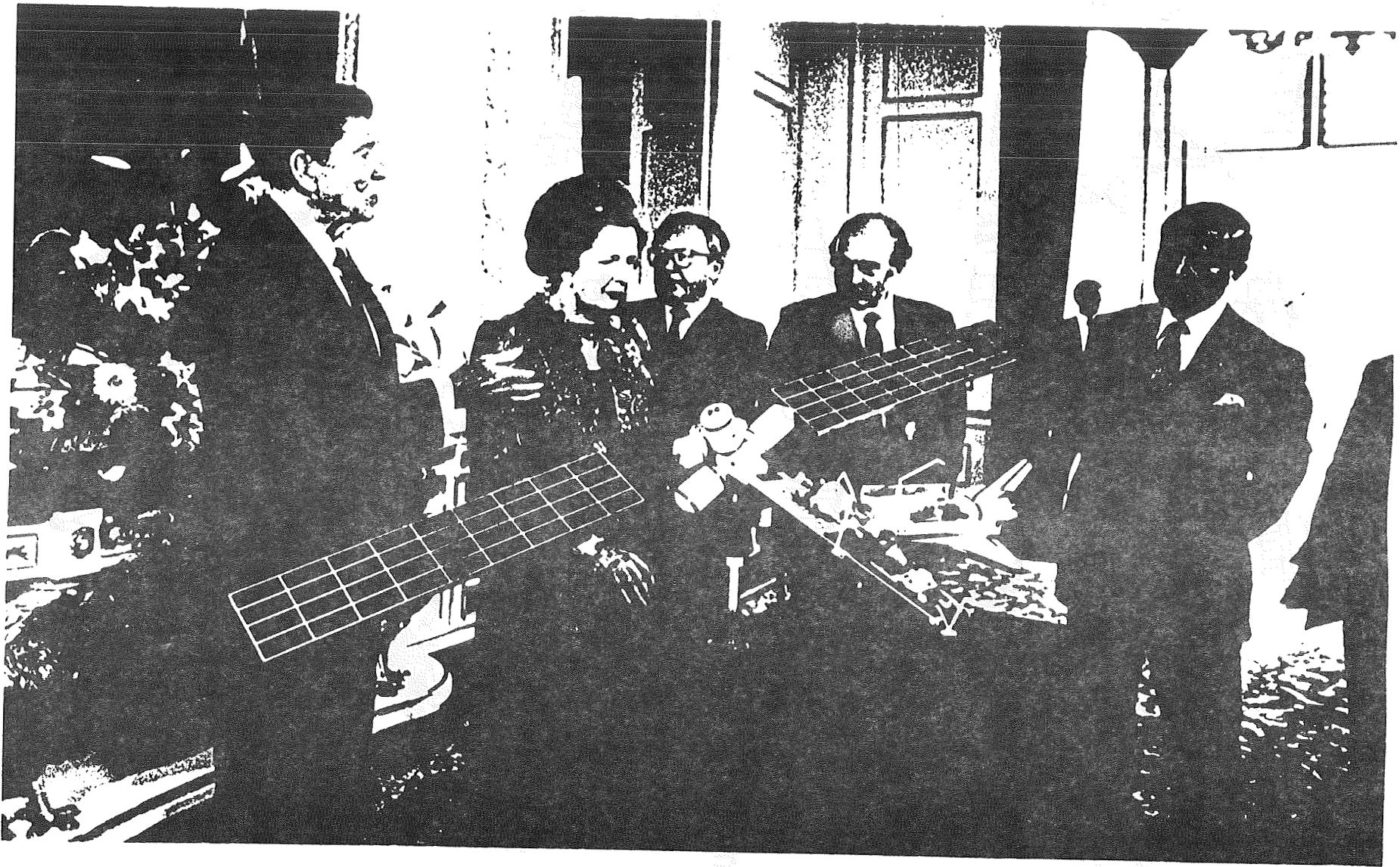


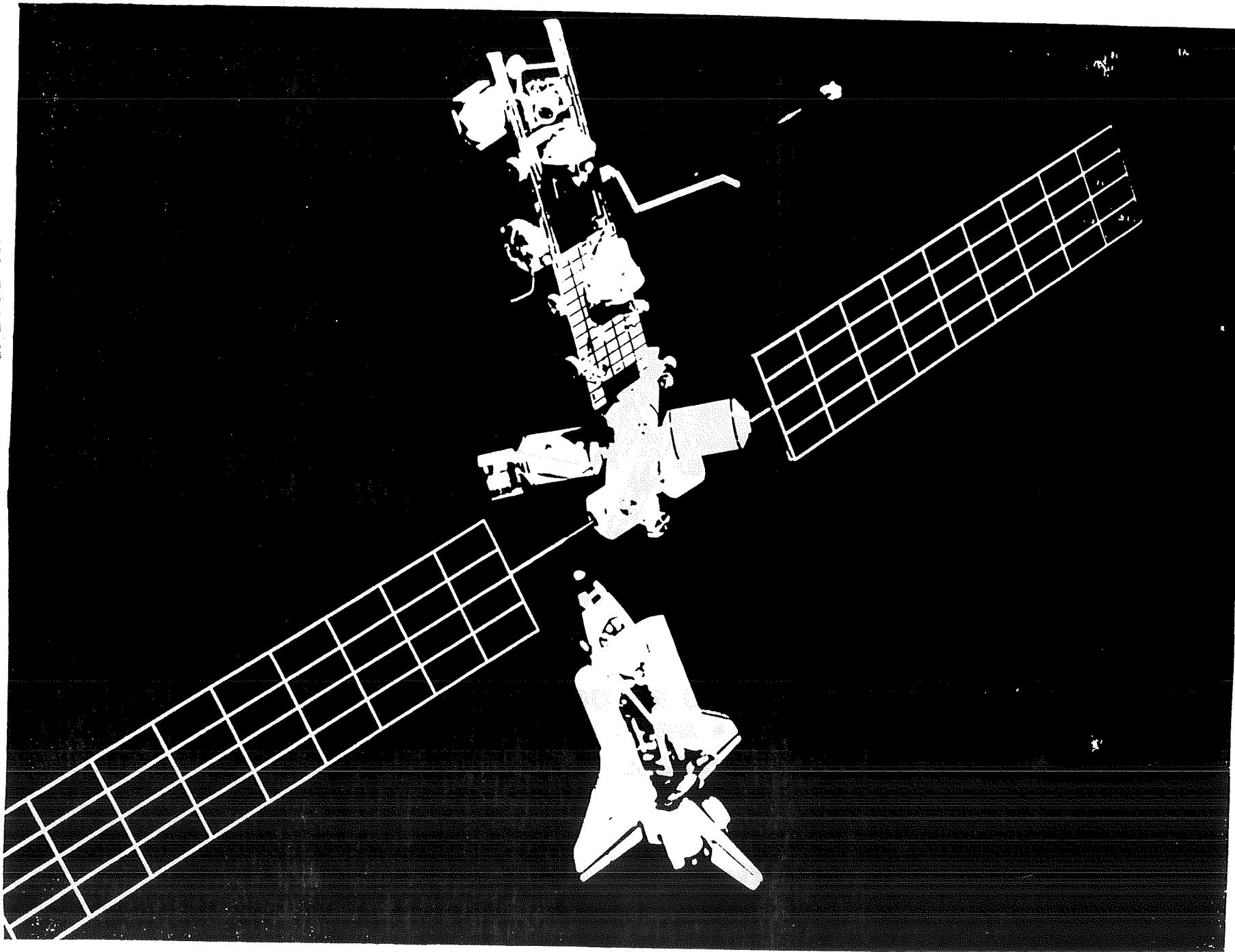
Power
Tower



CDG - Planar

Criteria





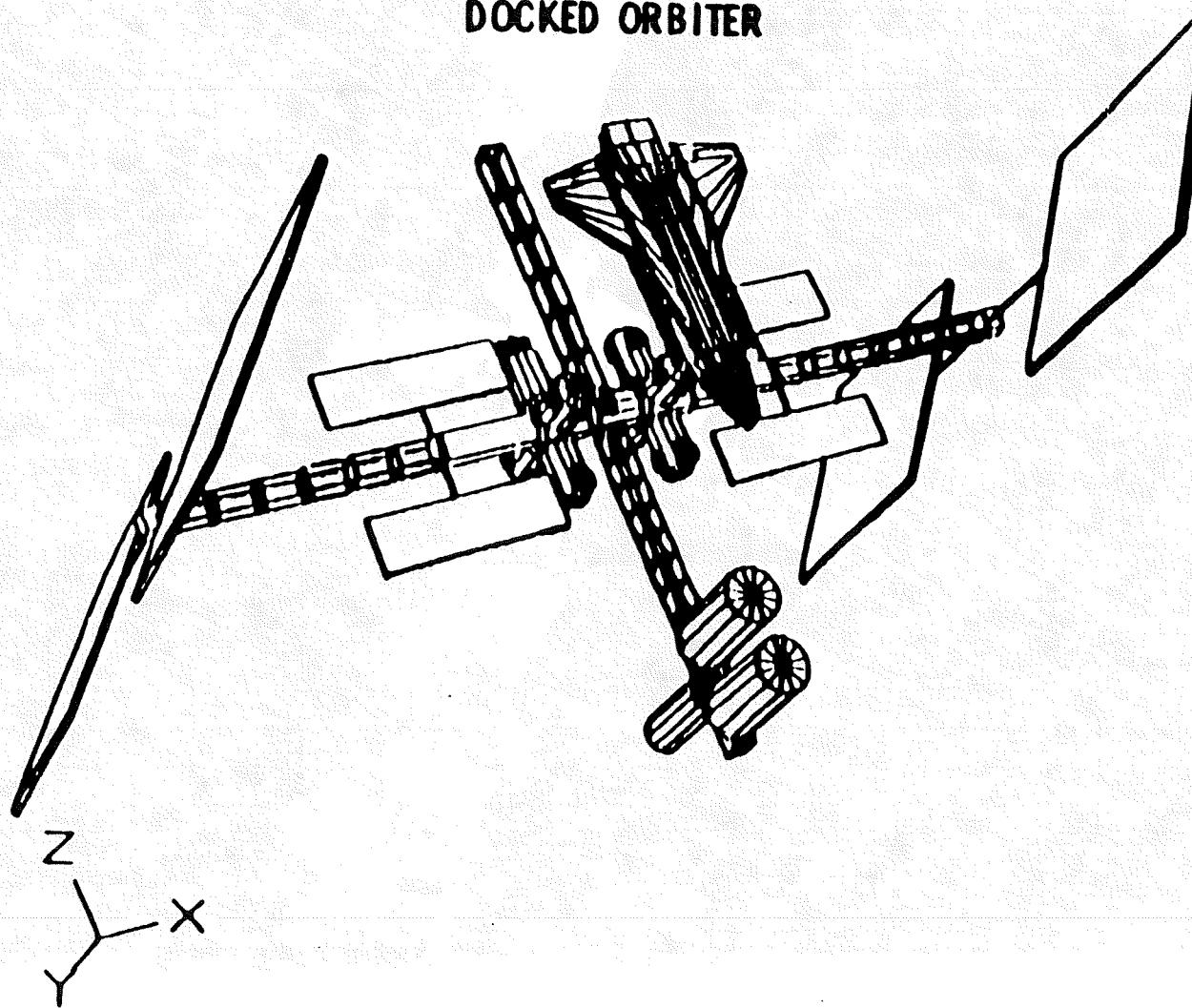
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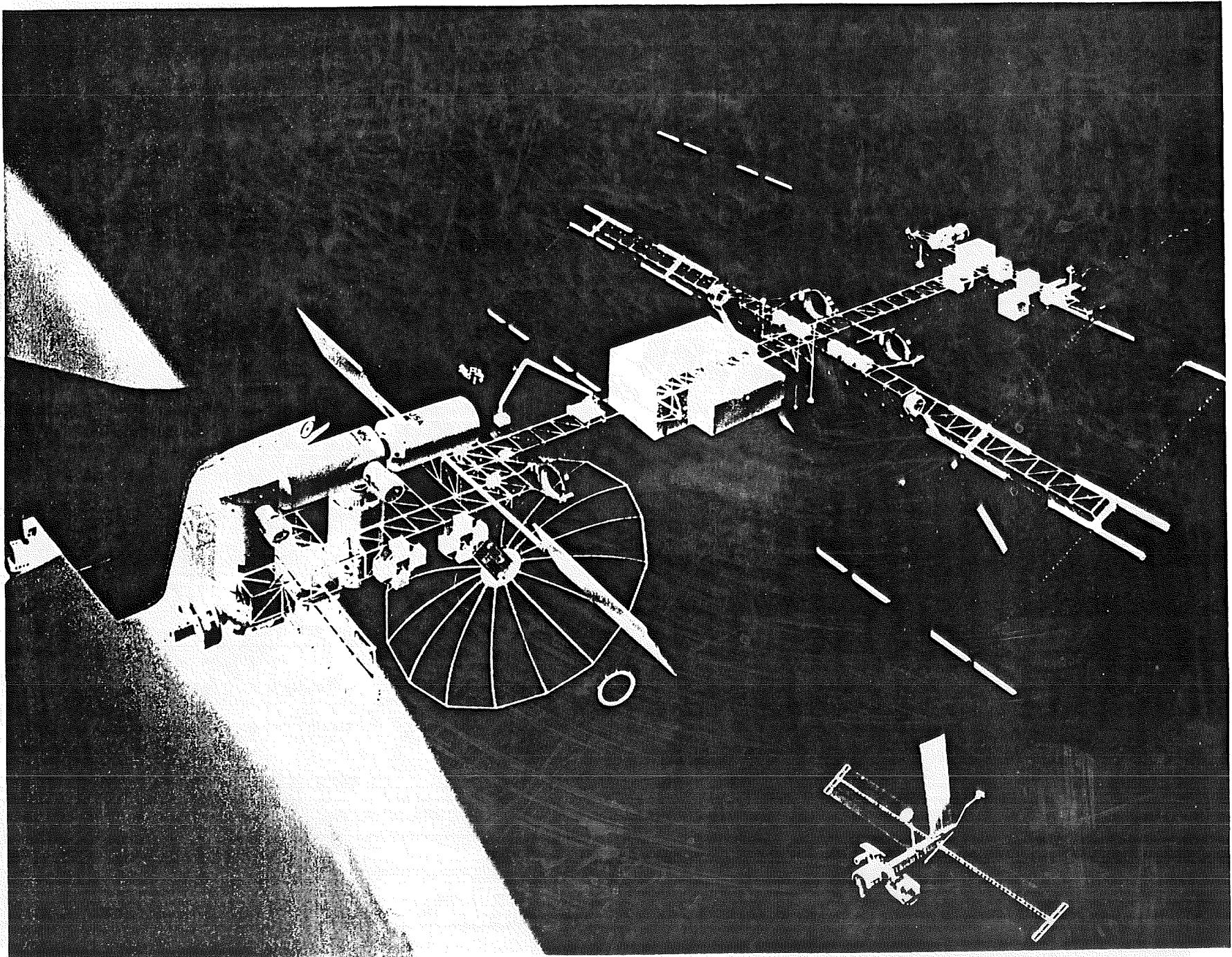
CDG – AXIAL RADIAL BASELINE

GROWTH
 $\beta = \beta_{\text{max}} = 52^\circ$
DOCKED ORBITER

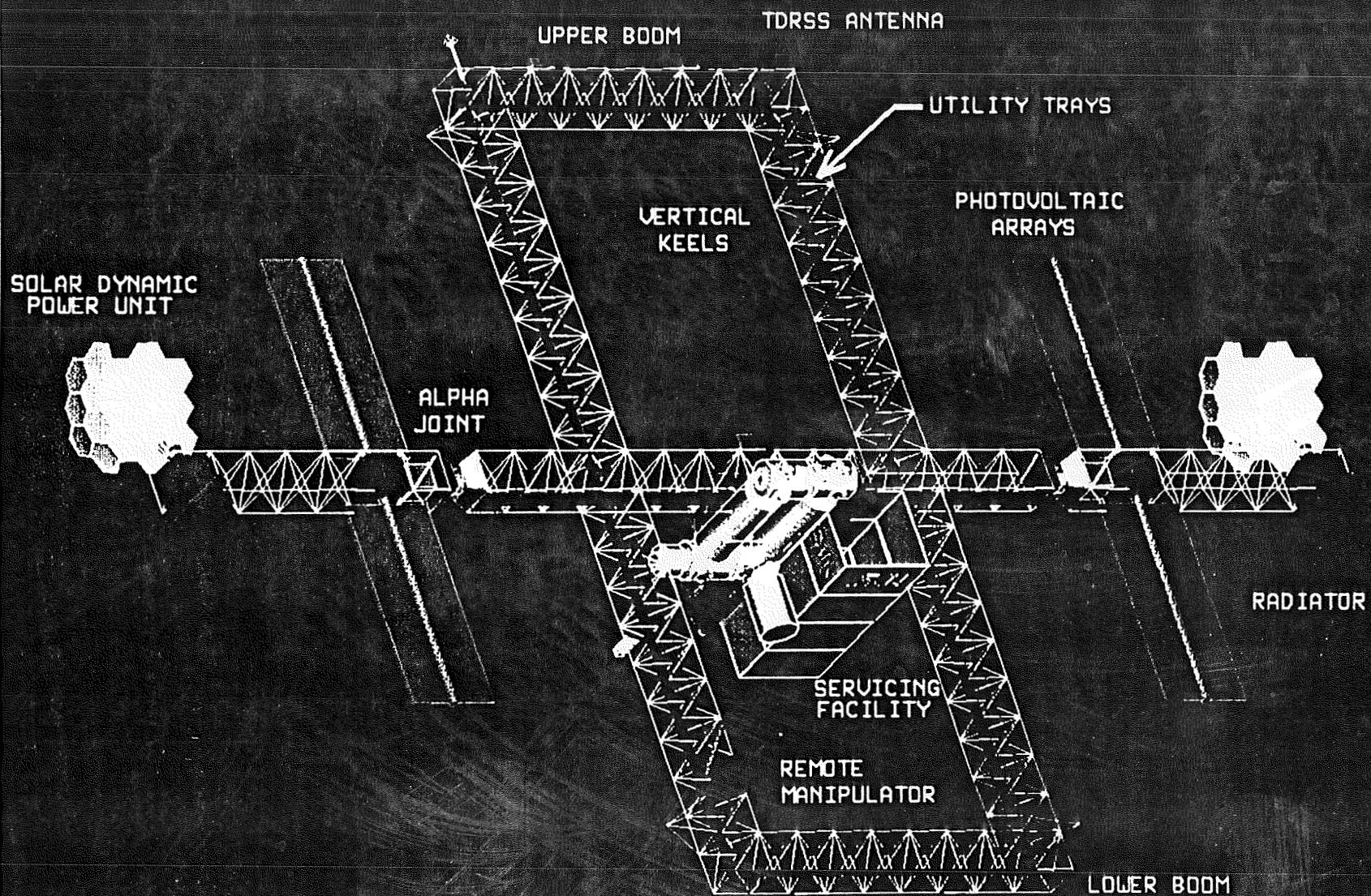


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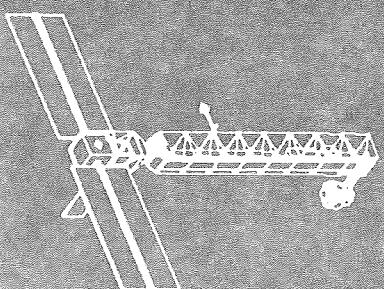
CRITICAL EVALUATION TASK FORCE (CETF)
FINAL ASSEMBLY CONFIGURATION



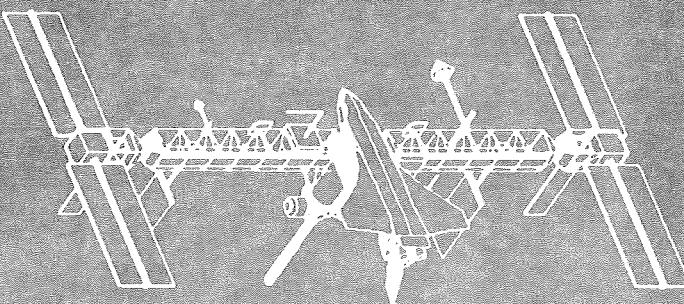
ASSEMBLY SEQUENCE HIGHLIGHTS

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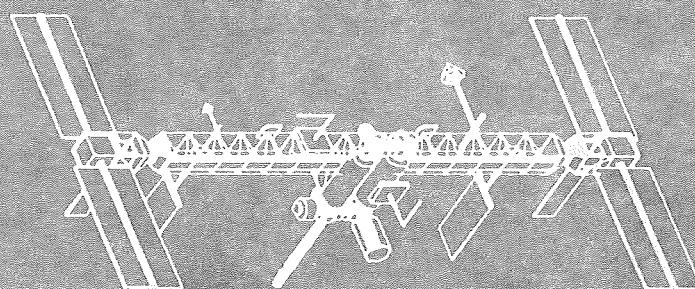
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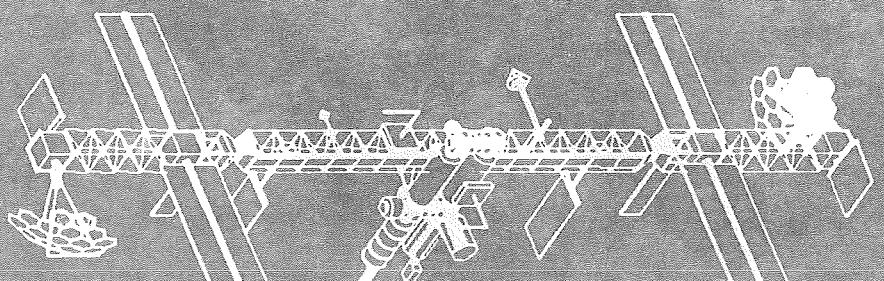
ASSEMBLY FLIGHT 1



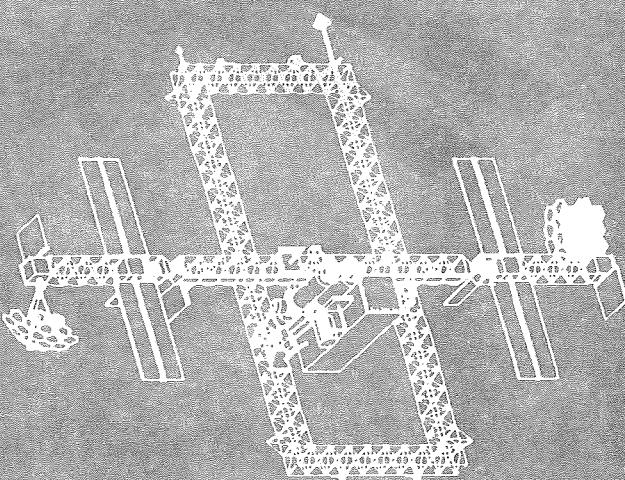
ASSEMBLY FLIGHT 5
(FIRST TENDED CAPABILITY)



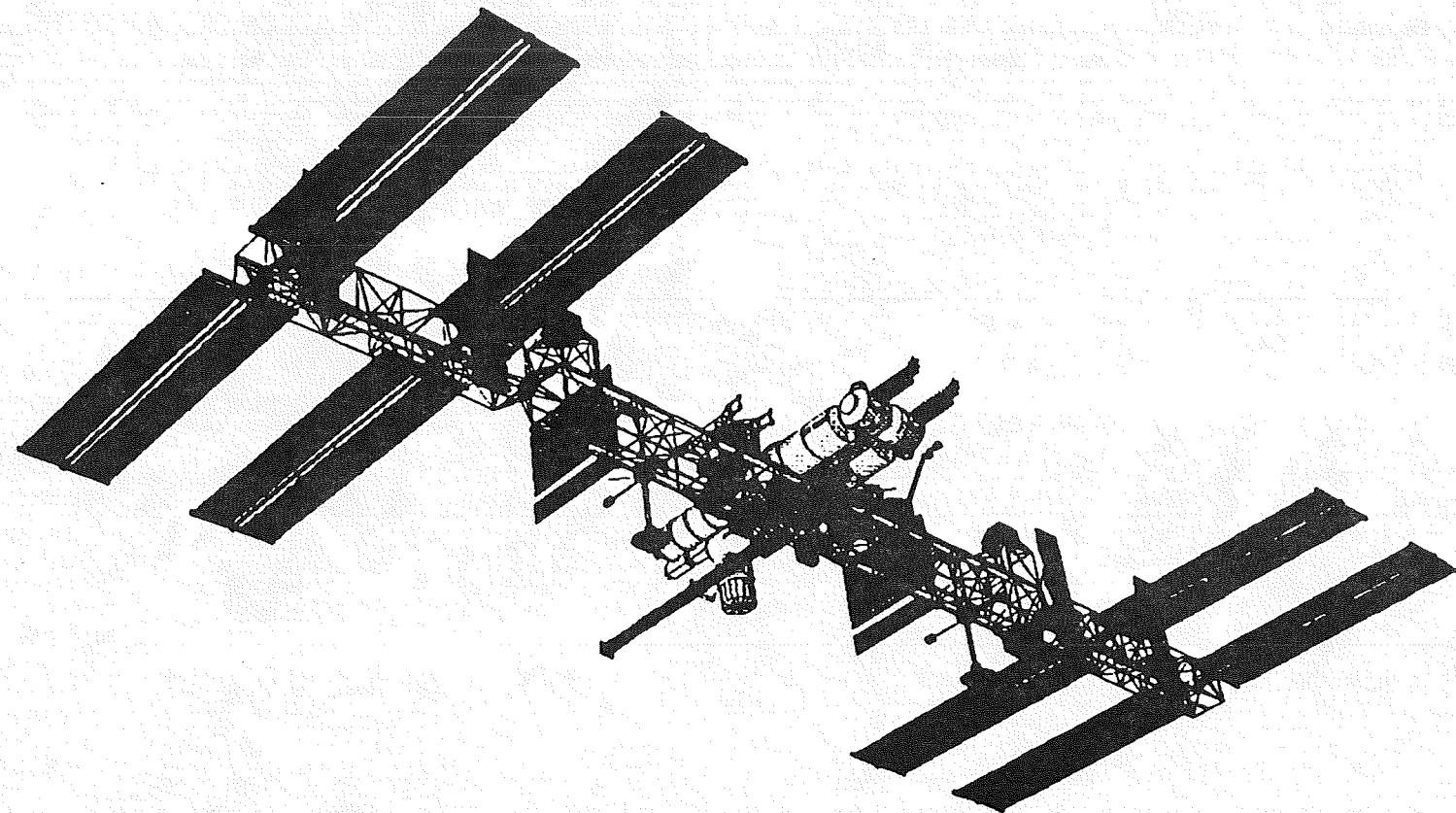
ASSEMBLY FLIGHT 8
(PERMANENTLY MANNED CAPABILITY)



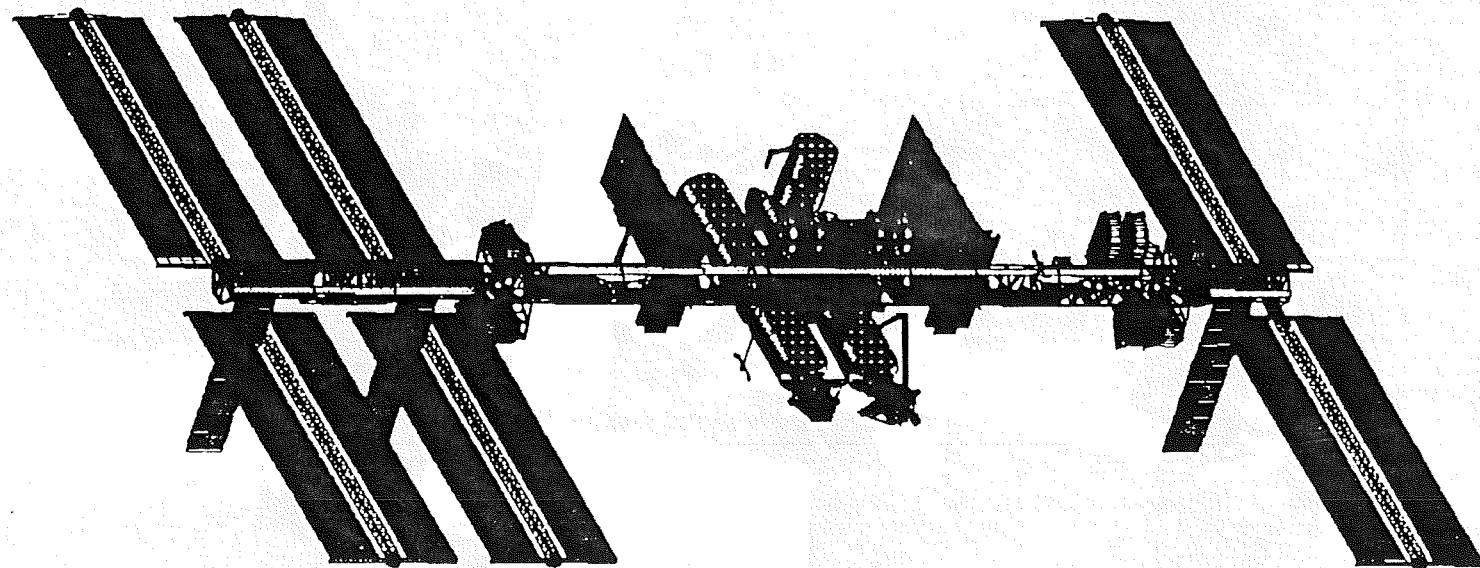
ASSEMBLY FLIGHT 11
(INTERNATIONAL PARTICIPATION)

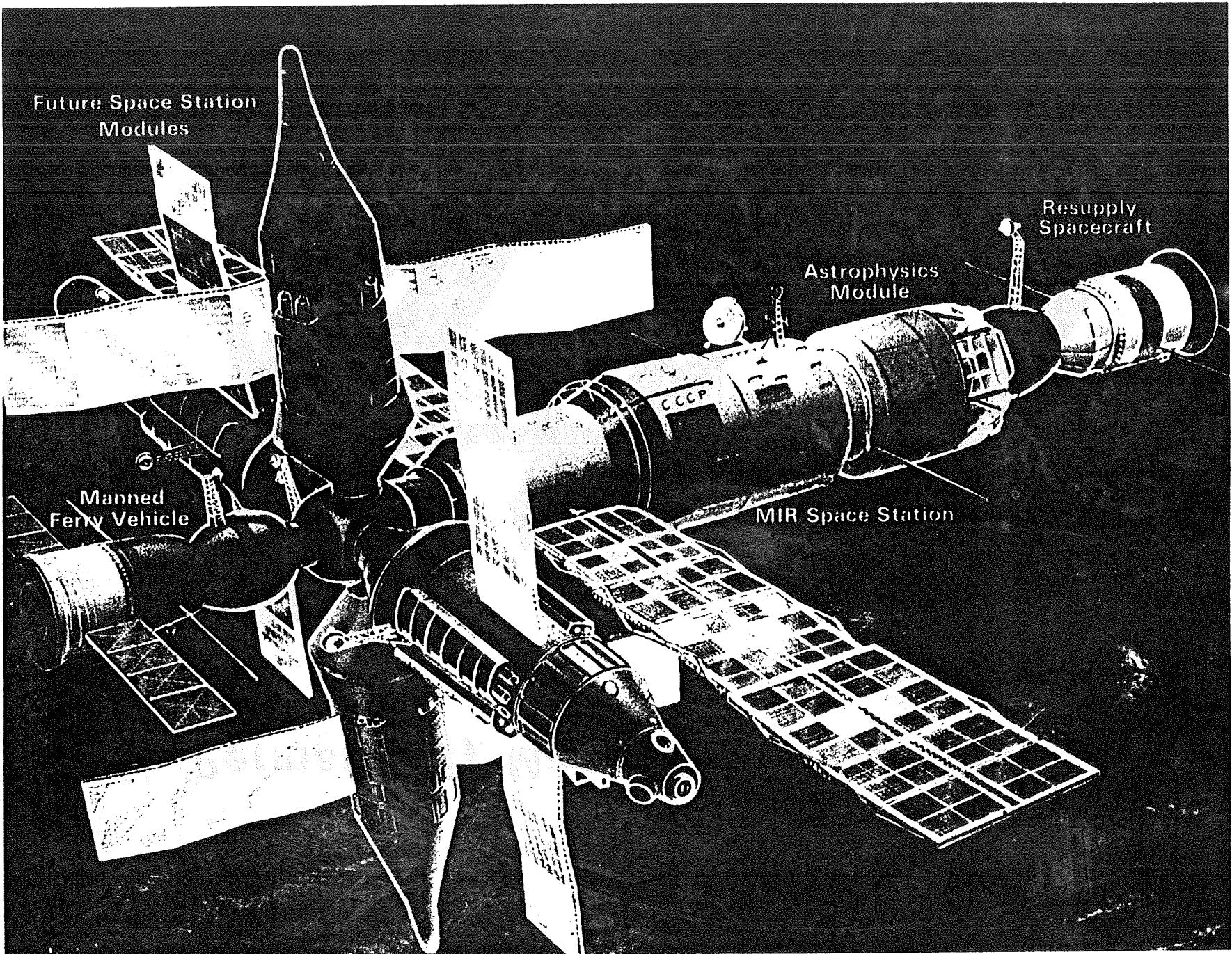


ASSEMBLY COMPLETE-FLIGHT 17



Permanently Manned Configuration





MAJOR

